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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.
09/318,443	05/25/99	HEMMATI-BRIVANLOU	A	600-1-211N

HM12/0315

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EXAMINER	
SATISH, J	
ART UNIT	**PAPER NUMBER**
1645	11

DATE MAILED: 03/15/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/318,443	Ali Hemati-Brivanlou et al
Examiner	**Group Art Unit**
Jaya Satish,Ph.D.	1645

☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1 136(a).

Disposition of Claims

☒ Claim(s) *1-26* is/are pending in the application.

Of the above, claim(s) *10 and 13-26* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-9, 11, and 12* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *8*

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Restriction/Election

Applicant's election with traverse of Invention Group I, claims 1-12 filed on January 19, 2000 (Paper No.10) in response to the Office Action of November 19, 1999(Paper No.7) is acknowledged and has been entered. Invention Group II (claims 10, 13-19), Invention Group III (claims 20-22), Invention Group IV (claims 23-26) are withdrawn from further consideration by the examiner, (37 CFR 1.142(b)), as being drawn to non-elected inventions.

Please note that claim 10 recites a purified protein product. Claim 10 inadvertently included in Invention Group I by the examiner in the first office action is being regrouped in Invention Group II since it is drawn to a different product, a purified protein which is biologically and functionally different from a nucleic acid. Applicant's argument and request for prosecuting claims in Invention Group 1 and Invention Group IV together, was reexamined. However, in response to the applicant's argument the examiner would like to point out that Group I Invention, drawn to a product, a nucleic acid encoding a protein is distinct from Invention Group IV drawn to experimental methods using embryonic cells of Xenopus laevis for identifying a drug that modulates the activity of a protein (4AIII) and further comprising assaying for transcription of epidermal markers using RT-PCR. The experimental method claimed in Invention Group IV involves materially distinct method steps, materially distinct reagents and materially different objectives.

Invention Group I and Invention Group IV are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using the product (MPEP 806.05(h)). In the instant case, the product, isolated nucleic acid claimed in Invention Group I can be used with a materially different process, such as in nucleic acid hybridization assays.

For the reasons stated above, restriction between the product, isolated nucleic acid claimed in Invention Group I and the process claimed in Invention Group IV is considered proper based on a separate search and/or different classification. The restriction made between Invention Group I claiming a product and Invention Group IV claiming a method will be maintained by examiner in this office action. Invention Group I (claims 1-9, 11-12) are currently under prosecution.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a paten(b) the invention was patented or described in printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 11 -12 are rejected under 35 U.S.C. 102(a) as being anticipated by Weinstein et al (Development (Cambridge), Nov. 1997, 124(21) 4235-4242).

Summary of the Invention: Claims 1-3, recite an isolated nucleic acid or a nucleic acid containing the coding sequence of SEQ ID No.1 and encoding a vertebrate translation initiation factor 4AIII (eIF-4AIII), having an amino acid sequence of SEQ ID NO:2 or SEQ ID NO.2 with a conservative amino acid substitution or a sequence substantially homologous to that of SEQ ID NO.2. Claims 11-12 recite isolated nucleic acid containing 15 or more nucleotides that hybridizes to SEQ ID NO.1 or to nucleotides 1-90 of the coding region of SEQ ID NO.1 under standard hybridization conditions.

Weinstein et al disclose a eukaryotic translation initiation factor (XeIF-4AIII) mRNA from Xenopus laevis, showing 100% identity to the isolated nucleic acid containing the nucleotide sequence of SEQ ID NO: 1 and encoding a vertebrate translation initiation factor 4AIII(eIF-4AIII) with an amino acid sequence showing 100% similarity to the amino acid sequence of SEQ ID NO.2 recited in the claimed invention. Weinstein et al teach that 4AIII is a divergent member of the eIF-4A gene family. Weinstein et al teach primer sequences (15 or more nucleotides) that hybridize to XeIF-4AIII of SEQ ID NO.1 Weinstein et al et al teach that RT-PCR analysis was performed on Xenopus embryos harvested between blastula and neural plate to detect expression of

XeIF-4AIII with radiolabelled oligoprimers that hybridize to XeIF-4AIII under high stringency conditions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinstein et al whose teachings have been set forth above and further in view of Boss et al (US Patent No: 4,816,397, 03.28.1989).

Summary of the Invention: Claims 1-3 recite an isolated nucleic acid or a nucleic acid containing the coding sequence of SEQ ID No.1 and encoding a vertebrate translation initiation factor 4AIII (eIF-4AIII), having an amino acid sequence of SEQ ID NO:2 or SEQ ID NO.2 with a conservative amino acid substitution or a sequence substantially homologous to that of SEQ ID NO.2.

Claims 4-9 recite an isolated nucleic acid of claim 1 linked to an expression control sequence, or an isolated nucleic acid of claim 1 further comprising a heterologous nucleotide sequence encoding a fusion protein, a unicellular host transformed or transfected with the nucleic acid of

claim 6, a method of culturing the host cell under conditions that provide for expression of the protein.

The teachings of Weinstein et al have been set forth previously.

Weinstein et al do not expressly teach isolated nucleic acid further comprising heterologous nucleotide sequence encoding a fusion protein or a recombinant method for the expression of 4AIII comprising the isolated nucleic acid of claim 1 operably linked to an expression control sequence, a unicellular host cell transformed or transfected with the expression vector, a method of culture of the host cells under conditions that provide for expression of the protein by the cell and a step of isolating or purifying the protein.

Boss et al teach processes for production of heterologous multi chain polypeptides or proteins such as interferon, human insulin, growth hormone, in cells by recombinant DNA techniques comprising construction of expression vectors (plasmids) containing gene promotor sequence, transformed host cells (bacterial, yeast and eukaryotic cells such as insect and mammalian cell lines) with coding DNA sequences encoding said polypeptide or heterologous sequences encoding fusion peptides, and culture of the transformed host cell under inducing conditions that will allow expression of the said polypeptide and steps for the recovery of the protein.

Given that, Weinstein et al have taught a Xenopus laevis eukaryotic translation initiation factor XeIF-4AIII mRNA with 100% identity with the nucleic acid sequence of SEQ ID NO. 1, and that Boss et al have taught a recombinant DNA method for the expression of recombinant proteins,

it would have ben *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to isolate a nucleic acid of SEQ ID NO 1, identical to the vertebrate translation initiation factor mRNA from Xenopus laevis and encoding a vertebrate translation initiation factor 4AIII of SEQ ID NO: 2, showing functional similarity to XeIF-4AIII as taught by Weinstein et al. One of ordinary skill in the art would have been motivated at the time the invention was made to use the isolated nucleic acid of SEQ ID NO 1 or a nucleic acid comprising the coding sequence of SEQ ID NO.1 or a nucleic acid sequence with a conservative or silent substitution or a heterologous sequence in conjunction with recombinant DNA methods as taught by Boss et al for the expression and production of a vertebrate translation initiation factor 4AIII (eIF-4AIII) as recited in the claimed invention, that is functionally similar to XeIF-4AIII as taught by Weinstein et al or for the expression of recombinant or heterologous or fusion proteins as taught by Boss et al.

The claimed invention is therefore *prima facie* obvious.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaya Satish at (703) 306 9047. The examiner can normally be reached, Monday through Friday from 9.00 AM to 4.00 PM. If attempts to reach the examiner by telephone are unsuccessful, a supervisory examiner, Anthony Caputa can be reached at (703) 305 -3995.

Any inquiry of a general nature should be directed to the Group receptionist at (703) 308-1235.

Papers relating to this application may be faxed to Technology Center 1600 at (703) 308-4426. Any documents submitted by fax transmission will be considered an official communication unless the cover sheet clearly indicates that it is an informal communication.

Jaya Satish, Ph.D.

Feb 29, 2000

GARY L. KUNZ
PRIMARY EXAMINER
GROUP 1200